

CLAIMSSEALING SYSTEM FOR MEDIA-CARRYING PARTS

1. Detachable sealing system for media-carrying parts (12, 13), particularly for aseptic applications, with a seal adjacent to the media area wall (30) and which seals the sealing system if the parts (12, 13) are braced against one another, characterized in that the parts (12, 13) have mutually precisely complimentary sealing surfaces (20, 25), which are directly pressed onto one another for forming a clearance-free seal, the contact surface (44) between the sealing surfaces (20, 25) being limited to a narrow area directly adjacent to the media area (19).

2. Sealing system according to claim 1, characterized in that the width of the contact surface (44) is  $1/5,000$  to  $1/50$ , preferably  $1/1,000$  to  $1/250$  of the nominal width of the sealing system and is in particular between 0.01 and 1 mm, preferably 0.05 and 0.2 mm.

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3. Sealing system according to claim 1 or 2, characterized in that the contact surface (44) is loaded with a specific sealing pressure, which is in the elastic range of the material of the parts (12, 13), preferably in the range of approximately 20 to 80% of the yield point ( $R_{p0.2}$ ) of the material of the parts (12, 13), particularly between 30 and 140 N/mm<sup>2</sup>.

4. Sealing system according to one of the preceding claims, characterized in that the sealing surfaces (20, 25) have a mutual guidance transversely to the media area wall (30).

5. Sealing system according to one of the preceding claims, characterized in that the cross-section of the sealing surfaces (20, 25) has a mutually complimentary, preferably S-shaped curved profile.

6. Sealing system according to one of the preceding claims, characterized in that the sealing surfaces (20, 25) are designed in such a way that the specific sealing pressure decreases from the intersection line of the sealing gap (45) with the media area wall (30) and preferably surface portions available as reserve sealing surfaces (21, 26) at the contact surface (44) are adjacent to both parts, which also have a complimentary design, particularly a curvature and preferably in the vicinity of the reserve sealing surfaces (21, 26) is provided an annular clearance (46) with a size of  $1/5,000$  to  $1/500$ , preferably  $3/5,000$  to  $7/5,000$  of the nominal width of the sealing system.

7. Sealing system according to one of the preceding claims, characterized in that on both parts (12, 13) are provided transversely and spaced from the

sealing surfaces (20, 25) guide sections (35, 41) for the precentring of the two parts and adjacent to the guide sections are insertion bevels (34, 40, 42) for the bringing together of the two parts and between the guide sections (35, 41) is formed a separating gap (47) through which there is a mutual alignment of the two parts before the sealing surfaces (20, 25) are pressed together.

8. Sealing system according to one of the preceding claims, characterized in that the contact surface (44) is designed in such a way that the media area walls (30) of both parts (12, 13) are aligned in projection-free manner with the sealing gap (45).

9. Sealing system according to one of the preceding claims, characterized in that the contact surface (44) adjacent to the media area wall (30) is in an area of the sealing gap (45), where the sealing surface (20) of one of the parts has a sealing lip (37) projecting towards the other part and which is received in a corresponding half-recess (31) on the sealing surface (25) of the other part.

10. Sealing system according to one of the preceding claims, characterized in that the sealing pressure is predetermined by a stop-limited clamping device (50).

11. Sealing system according to one of the preceding claims, characterized in that between the parts in the clamping direction there are stop faces with a clearance (48) between them, whose width is sufficiently large that on bracing the sealing system up to the closing of the clearance (48) the sealing pressure is built up by the elastic deformation of the parts, the clearance width preferably being approximately  $1/5,000$  to  $1/100$ , preferably  $1/100$  to  $3/100$  of the nominal width of the connection.

12. Sealing system according to one of the preceding claims, characterized in that between a clamping device (50) bringing about the bracing of the parts and the sealing surfaces (20, 25) is interposed at least one portion of the parts subject to an elastic deformation, said portion being in particular formed by at least one annular or tubular projection (24) between the clamping device (50) and the sealing surface (20, 25).

13. Sealing system according to one of the preceding claims, characterized in that the sealing system is a joint connection between two media-carrying parts, particularly between two pipes.

14. Sealing system according to one of the preceding claims, characterized in that the parts (12, 13) are made from a hard material, the parts being in each case made from an equally hard material, particularly metal, such as

stainless steel or plastic.

15. Method for the manufacture of a sealing system according to one of the preceding claims, characterized in that the sealing surfaces (20, 25) are produced by profile precision turning by means of mutually complimentary profile cutting edges and preferably the reserve sealing surfaces (21, 26) are produced simultaneously with the same profile cutting edges.